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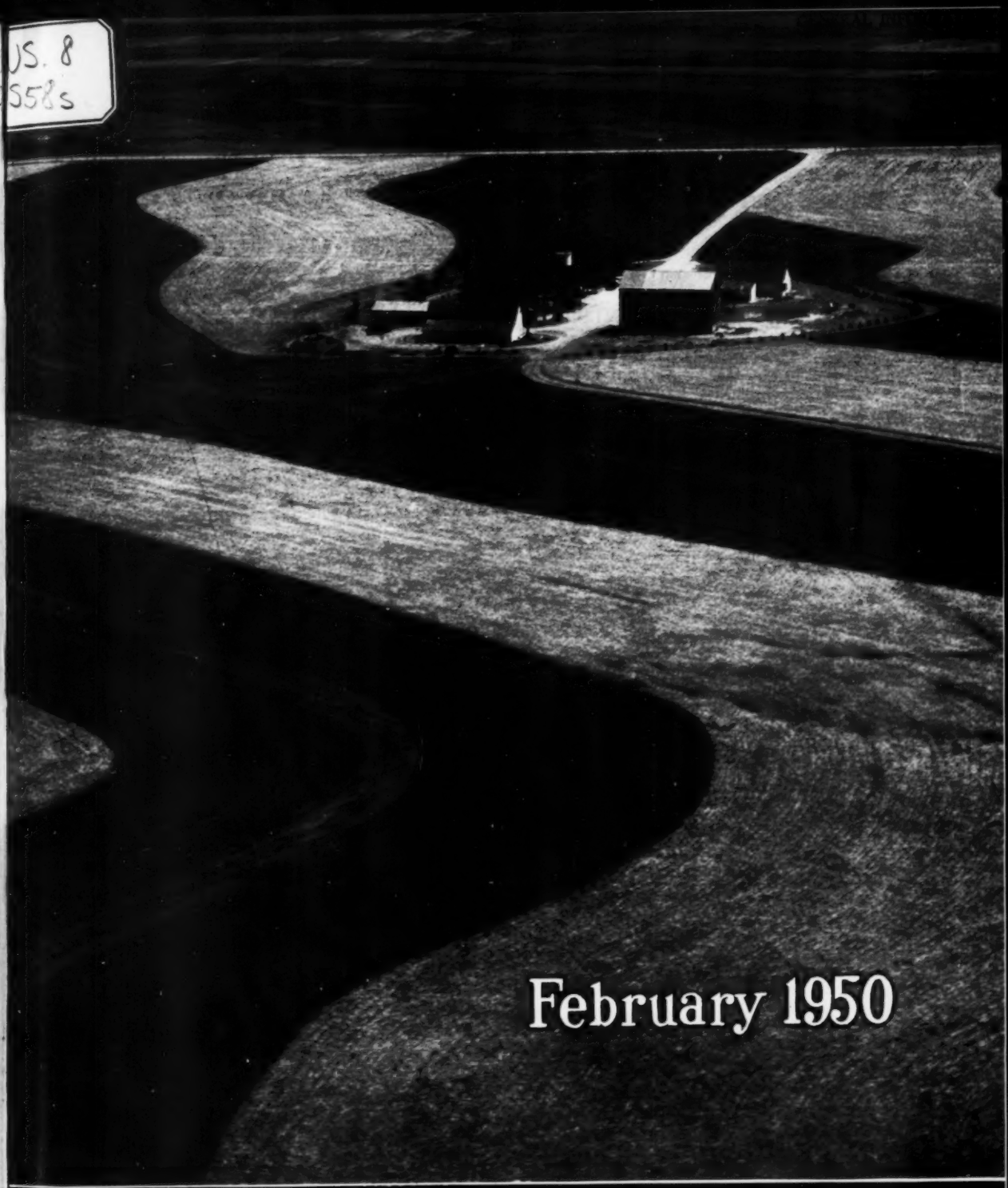

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☆ THIS MONTH ☆

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WELLINGTON BRINK
Editor
Art Work by
W. HOWARD MARTIN

SOIL CONSERVATION is published by direction of the Secretary of Agriculture as administrative information required for proper transaction of the public business, with approval of the Director of the Budget. SOIL CONSERVATION supplies information for workers of the Department of Agriculture and others engaged in soil conservation.

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CUP AWARDED FOR PROGRESS.—Dukes County (Mass.) Soil Conservation District made district history in the northeast when it offered and awarded a cup as a prize to "the farmer or landowner who, in the opinion of the district, has shown the greatest effort and results in completion of his farm plan." E. Bradford Keith, of Brockton and Chilmark, the initial winner, will hold the cup for a year. It will become the permanent possession of the first farmer who wins it three times.

EXTRY! EXTRY!—The Arizona Association of Soil Conservation Districts has started a printed monthly newspaper, *The Arizona Soil Conservationist*, which is devoted to reporting district activities in the State. The first issue of this five-column, tabloid-size newspaper was published on October 1. The publication is issued from Coolidge, and David F. Brinegar is the editor.

FRONT COVER.—This view is from Los Angeles County, Calif. Over 50,000 acres of strip cropping have been established in Antelope Valley and Portland Ridge. More than 69,500 acres have been planned. These strips are 240 feet in width. The straight rows were made to prevent wind erosion; the curved strips were designed to prevent erosion from both wind and water. The photo is by Dale L. Swartz.

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Out of rich soil springs a STRONG LEADER

Boyce Adams.

By MARY WEBSTER

THE Mississippi delta is more than a section of a State. It's more than 18 counties with some of the richest soil and the most progressive planters in the South. It's also a state of mind. A true deltan is convinced that nowhere else can be grown such fine cotton, such flavorsome pecans, such succulent pasturage.

But the deltan knows also that anything affecting agriculture elsewhere affects delta farming. That's one of the reasons the delta contributes leaders to Mississippi and national agriculture.

Note.—The author is clerk, Soil Conservation Service, Clarksdale, Miss.

A. B. "Boyce" Adams, of Clarksdale, is president of the Mississippi Association of Soil Conservation District Commissioners. He is also Mississippi's council member on the National Association of Soil Conservation Districts, and a member of the association's national legislative committee. And since 1925 he has been a director of the Staple Cotton Association.

Those are some of the responsibilities Boyce Adams shoulders outside the delta. At home, he is a director of the Delta Council and chairman of the council's soil conservation committee. His interests are as diversified as the 3,000-acre plantation he manages for the family. But soil conservation he considers the most important.

Boyce Adams was one of the first deltans to realize that their much-loved soils were ailing. Even delta soil can be eroded, can absorb so much rain that it demands carefully planned and main-

1. One of three churches Adams helped finance for tenants on family plantation. 2. Boyce Adams first planted kudzu on ditch banks in 1934. 3. He learned years ago that rich Delta land needed soil conservation to grow its best crops year after year.

tained drainage systems, and can be overworked in cotton until its essential minerals and organic matter are depleted.

When the Coahoma County Soil Conservation District became the first delta district, Adams was appointed a commissioner by the State Soil Conservation Committee. He now has been chairman several years.

Long before the Coahoma district was organized, Adams was looking for solutions to delta land and water problems. He began serving on the Coahoma County Drainage Commission in 1920.

In 1934, when the now-famous kudzu was used largely as a vine to shade porches in the South, Adams was planting it on canal banks to control erosion and willows. And it worked!

"The advantages of vegetation on canal banks to control erosion was obvious, and we felt that kudzu could be utilized to push out the willows whose roots choked the canal," Adams recalled. "Kudzu has been planted on about 3 miles of ditch bank on our plantation, and has fully proved itself to be an effective preventive for erosion along laterals and canals, as well as a splendid control of undersirable vegetation."

Adams was one of the leaders who obtained a CCC camp in 1940 to rehabilitate delta drainage canals. The camp was located on a part of his land.

When large earth bars were found by the CCC workers in canals on the Adams plantation, the soil was traced to its source—the surrounding fields. And his farm was one of the first in the county to be used for the demonstration by the Soil Conservation Service of a complete soil and water conservation program.

Not until 1946 did Adams finally solve the biggest drainage problem on his land. For years he had attempted to drain a 60- to 70-acre depression with ordinary farm tile. Each time the tile filled with silt, and in several places large sink holes formed. Finally, SCS technicians helped him to put in a combination of open ditches, storm sewer tile, and concrete structures that carried the unwanted water through a high bank into Sunflower River.

"Drainage of this land-locked depression in the center of our farm back in 1946 increased the farm's value more than $5,000, and paid $2,400 on a $3,600 investment in 1 year," the soil conservation leader declared.

Every type of drainage work used in the delta, including some comparatively new measures like row arrangement and W-ditches, is used on the plantation. But the conservation program there includes much more than drainage. There are sericea meadow strips, sericea planted on critical areas, a good crop rotation, black locust for fence posts, and lespedeza bicolor as feed for quail.

That the 100 tenant families are well-satisfied with his management of the plantation is shown by the fact that some have been on the place for 52 years, in Adams' time and his father's before him. Adams has helped with the construction costs of three churches on the plantation, two for Negroes and one for whites.

His father founded the plantation in 1886, going to the delta from South Carolina. In the delta the elder Adams found a section with soil "rich beyond belief" and game so plentiful that tenants ate venison in the winter time like beef. Boyce Adams recalled that his father said he placed 11 deer in the smokehouse in 1 week.

The fine set of antlers over the door in Adams' farm office are his father's trophy, he admits, but the 40-inch fish displayed in a case there was of his own catching. Hunting, fishing, and baseball are among Boyce Adams' interests. At Mississippi College he played baseball, basketball, and football.

Although his father died several years ago, his mother is still living and continues to show a deep interest in the management and expansion of the farm, and in the welfare of the tenants. Her inspiration and encouragement, Adams said, have been of invaluable assistance to him throughout his life.

When Mississippi district commissioners formed a State association, Adams was chosen vice president. He was elected president in January 1948.

Under his leadership the association's active membership and influence have steadily grown, and now all of the State with the exception of only three and a fraction counties has been organized by landowners into soil conservation districts. He feels that all land in Mississippi will be organized into districts within a few years.

Mississippi's fast-growing interest in soil and water conservation is shown also by the fact that the State has the heaviest paid circulation of Soil Conservation Magazine. Many bankers and

other businessmen, as well as leading farmers, are among the subscribers.

Boyce Adams could easily use all his time with his work on his own plantation and the family land he manages, with the correspondence, speeches, and conferences that the presidency of the Mississippi association requires, with his work in the National Association of Soil Conservation Districts, and his Delta Council activities. But he manages to give many hours and much thought to other interests.

He has spoken on soil conservation before civic clubs and other groups all over the South, often illustrating his talks with slides made on his own land.

He has been president of the Delta National Farm Loan Association, covering Tunica and Coahoma Counties, for 12 years, and has served on the advisory and stockholders committee of the National Farm Loan Association since 1938.

As an active Baptist layman, Boyce Adams serves as a trustee of the Mississippi Baptist Seminary and has been moderator of the Riverside Baptist Association nine times. He is a past president of the Clarksdale Rotary Club, a former post commander of the American Legion, a past worshipful master of the Masonic blue lodge, and is past eminent commander of the Commandery. For 12 years he has been a member of the county school board.

But these many different activities have not lessened his local, State, and national soil conservation work. Every American, he believes, has a vital share of responsibility in maintaining the Nation's soil and water resources in a permanent, productive condition.

Deltans are proud of the way in which Boyce Adams is shouldering his part of that responsibility.

BANKERS SUPPORT SOUND SOILS MANAGEMENT

THE Nebraska Conservation Foundation, Inc., a nonprofit organization, has entered the campaign for erosion control and soil and water conservation. A pioneer in this type of organization, it was fostered by the Nebraska Bankers Association. Its members are bankers and officials of business and industry. Organization was completed during the bankers' convention at Lincoln in October.

Fred O'Hair, executive director.

J. R. Kenner, of Hebron, president of the Thayer County Bank and retiring president of the association, was elected president of the foundation. First vice president is A. J. Jorgenson, of Sidney, president of the American National Bank; second vice president, W. J. Coad, of Omaha, president of Omar, Inc.; and secretary-treasurer, John F. Davis, of Omaha, vice president of the First National Bank.

Employed as executive director is Fred O'Hair, president of the Central National Bank, of Greencastle, Ind., who has moved to Omaha.

With 9½ percent of all land in Nebraska included in soil conservation districts, and the balance expected to be scheduled for early referendums, all of the officers and nearly all of the bankers of the State are familiar with soil conservation district operation.

In fact, all of the officers have been leaders in advancing conservation in their communities.

J. R. Kenner, president.

Kenner and Coad are land operators and cooperators with soil conservation districts. Kenner was one of the early members of the board of supervisors of the Thayer County Soil Conservation District, sixth to be organized in Nebraska.

The foundation had its inception last summer when the executive committee of the Nebraska Bankers Association met with representatives of industry and business at Omaha. At that time, a temporary organization was formed, with equal representation on the board of directors for bankers and industry.

This board is made up of Kenner, Davis, Jorgenson, and Coad; Walter R. Chace, of Pilger, chairman of the board and president of the Farmers National Bank; Rolland Larmon, of McCook, president of the First National Bank; W. H. Munger, of North Platte, executive vice president of the First National Bank; Willard D. Hosford, of Omaha, general manager of John Deere & Co.; John B. Cook, of Scottsbluff, rancher and meat packer; Sam Whiteman, of Hastings, president, Kansas-Nebraska Natural Gas Co.; D. C. Harvey, of Wauneta, rancher and livestock feeder, and R. E. Campbell, of Lincoln, president, Miller & Paine, Inc.

Coad, whose farm near Omaha is regarded by the board of supervisors of the Douglas County Soil Conservation District as one of the most outstanding examples of a complete soil and water conservation plan, agreed to act as temporary president pending formation of a permanent organization. An ardent conservationist, and friend of Dr. Hugh Bennett, he has spent much time furthering the cause of conservation in the State and played a leading role in launching the foundation idea.

The objectives of the foundation are to foster and maintain a high state of practice in conserving the State's natural resources, to promote through banks and otherwise an enlightened community thought and action concerning conservation needs, to encourage full cooperation by persons interested in conservation with existing conservation agencies—Federal, State, local, and others—and to provide a service for gathering and distributing information about conservation to all interested persons.

The program adopted contemplated a wide range of activity. The foundation committed itself to work for:

1. Good land use planning. This, it is stated, should be carried down to planning correct use, field by field, as recommended by the State soil conservation committee, soil conservation districts, Soil Conservation Service, and State college.

John F. Davis, secretary-treasurer.

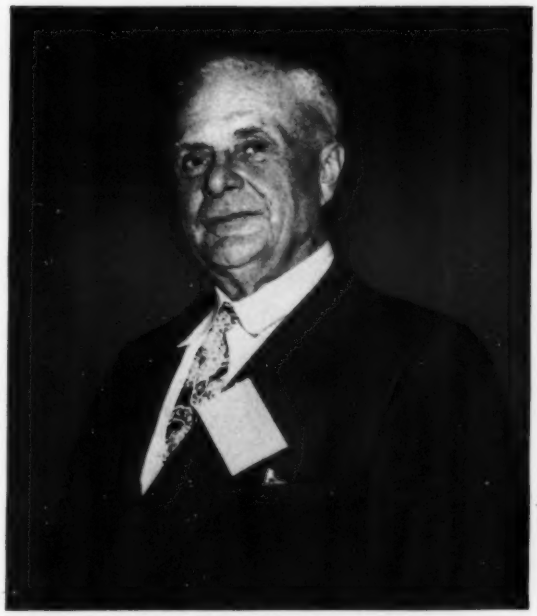
2. Pasture and livestock improvement through renovation; reseeding and fertilizing of existing pastures; seeding the right grasses on cultivated land that should be taken out of cultivated crops; and improved livestock programs, including raising livestock quality, cow-calf enterprises, and pasture feeding.

3. Control of wind and water erosion through the use of adapted measures, including grassed waterways, terraces and contour farming, strip cropping, stubble-mulch tillage, soil conserving crop rotations, gully plantings, and, on irrigated lands, land leveling, correct application of irrigation water, and drainage.

4. Development of good conservation education programs for the schools, including talks and tours.

5. Development of woodland projects—field and farmstead windbreaks to help control wind erosion and protect farmsteads and feed lots, and farm wood lots.

6. Cooperation with manufacturers and others in farm field days and demonstrations.



A. J. Jorgenson, first vice president.

W. J. Coad, second vice president.

In coming to Nebraska to devote full time to the affairs of the foundation, O'Hair has not relinquished his interests as president of the Central National Bank at Greencastle. A graduate of DePauw University, he was connected with the City National Bank at New York City for a number of years.

He brings to the foundation the benefit of 15 years of helping foster conservation in Indiana and of helping advance a sound conservation program in his county. These experiences, he said, have convinced him that a good conservation program in a community is as necessary to bankers, business, and industry as it is to farmers themselves.

"I have been amazed at the improvement in the financial condition of farmers who have put good conservation plans into practice," he said. "Helping the communities attain a high degree of conservation of soil and water is one of the best money-making possibilities available to the average banker today. We must have continuing productivity of the soil in order to have a continuing sound basis for loans and financing."

He points proudly to the fact that his home county, Putnam, has the reputation of having more land under approved conservation practices than any other county in Indiana.

DISTRICT PROFILE

RITTER of MASSACHUSETTS

Ernie Ritter.

Ernest Ritter, Hardwick, Mass., has been called a "whirlwind" because he does things in agriculture. In another respect, however, Ernie is entirely unlike a whirlwind, because he is constructive.

When soil conservation came to Hardwick and the Northwestern Worcester County Soil Conservation District was organized, Ernie was outstanding among its boosters. He obtained applications for assistance from nearly every farmer in the town of Hardwick—35 of them. And, when Rino J. Roffinoil, the SCS farm planner, started to make complete conservation farm plans for these farmers, Ernie accompanied him to some of the farms and worked with him and the farmers. Later he talked the plans over with most of the farmers and helped get better and more complete establishment. Now, he is secretary of the district, plugging at every opportunity for the establishment of conservation practices.

Ernie is just like that in many other agricultural and community enterprises. For instance, he has been a county committeeman for the USDA's agricultural conservation program since it was started in the 1930's. He's one of the supporters of the local Extension Service, and he was a member of the war board which handled draft deferments, machinery allotments, and so on.

All this means that Ernie takes on a lot of jobs, among which is the management of the local co-op, the Hardwick Farmers' Exchange. This is the community agricultural organization started in 1914 with the income from a well-invested $100,000, bequest to the community by Calvin Paige. He was a one-time Hardwick farm boy who piled up a fortune during California's gold rush, when he and his brother, Timothy, sold supplies to miners. Later they added to the profits in west coast utilities.

Ernest Ritter became manager of this Hardwick establishment—the oldest organization of its type in the State—in 1920, shortly after he was graduated from Massachusetts State College. He has become probably the most influential man in the area because of the confidence he has built through his daily activities and in doing business with 90 percent of the farmers in the trading area, selling them grains, fertilizer, seed, and miscellaneous equipment.

Under Ritter's managership, the Exchange developed into a self-supporting and well-paying enterprise that does half a million dollars business annually and returns to members more than is received in interest from the original Paige bequest. Last year this return exceeded $9,000. Since 1914 more than $83,000 in patronage dividends has been returned to Exchange members. Within 2 years, this total will exceed the amount of the original Paige bequest.

The Exchange buys grain and other farm supplies in carload lots. It effects a double-barreled saving in buying and in handling. Last year after paying all expenses, salaries, labor, insurance, and so on, amounting to $10,000, it was possible to return to members a 2-percent patronage dividend on the amount of their individual purchases. To the farmer the net cost of handling a ton of grain was 17 cents. The average Exchange member, Ritter says, buys $5,000 worth of grain and other supplies a year.

The Exchange has the benefit of a young and a vigorously progressive leadership. The members of the board of directors average 27 years in age and, with Ernie as manager, are constantly moving to more and more successes. The Ex-

(Continued on p. 166)

A FARM IS SALVAGED IN THE PIEDMONT

By CAL L. ROARK

Belly deep in the lush kudzu now growing on class VII land.

IF YOU suddenly came into possession of an eroded, depleted 997-acre Piedmont farm, what would you do with it?

Would you continue to plant 185 acres of cotton and 45 acres of corn each year or give up these crops altogether? And what would you do with all those steep, galled and gullied red fields here and there on the 600 acres of open land?

What about that good job you have? Would you forsake it to take your chances at making a better living on the badly washed, hilly farm?

W. Hugh McGee made these and many more decisions when, 10 years ago, he inherited such a farm at Starr, in Anderson County, S. C. Hugh McGee chose to make that 997-acre place into a farm that anyone who appreciates farm life would be glad to own.

He determined to put real life into expressions which he had heard and used while earning his bachelor's degree in agronomy at Clemson College and later while he worked with the Soil Conservation Service as a farm planner. Such expressions as "diversification" and "complete farm soil and water conservation" seemed to suggest the best guides for him to follow in his new venture.

And the wisdom of McGee's choice is clearly demonstrated.

I visited Hugh McGee and his farm recently, armed with a dozen or more good photographs taken here and there over the farm showing the condition of the land in 1940. And I cringed as I looked at those pictures before I reached the McGee farm. The land itself seemed to cry out

Note.—The author is information and education specialist, Soil Conservation Service, Spartanburg, S. C.

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W. Hugh McGee loves that sericea. Dixie crimson clover recently overseeded.

against its nakedness and scoured condition. Even the eight scrubby-looking cattle pictured on "left out" land seemed to complain that they didn't have a chance. What those pictures told depressed me.

But not for long. As I approached the farm I could see the results of 10 years of wise and loving care.

Proud and stately pines, now 10 to 20 feet tall, covered the denuded earth on steep fields with a blanket of cast-off needles under their evergreen canopy.

Nearby, other fields, not quite so steep or eroded, were healed with that rich-looking legume that is showing its usefulness throughout the Southeast—kudzu. As I passed along the deeply covered hillsides I imagined that a hard rain was beating down against the big green leaves. I could see, in my mind's eye, the drops hammering away but never reaching the earth until the rank cover of kudzu had tamed each drop, making it move slowly from the leaves, down the stems and through a thick mulch before it even touched the soil.

And on ahead, I saw more gentle slopes covered with a deep blanket of emerald green. Blocky, white-faced cattle grazed there leisurely. The autumn air seemed to freshen the grass, while all about oaks and poplars made ready to sleep for a season. I suspected, but did not know until I was close at hand, that this striking greenness was fescue and clover.

By now I had reached the McGee home, a beautiful structure, well-placed and attractively landscaped. Surely, I thought, this man has managed to make the farm bring good returns to have a home like this. It was not until later that I learned McGee had obtained lumber by harvesting select trees from his own woodland, by sawing them in his own mill, and by trading this lumber for finished, dry lumber. The home was the result of a remodeling according to plans made by Mrs. McGee.

Hugh McGee was waiting for me. He's a big fellow, self-described as "big enough and ugly enough to be a football player." From then until the close of day, McGee, Technician Brice Latham, and I gave the farm a close going-over.

"My whole farm program is based on putting every bit of land to a use it's best suited for, and then handling it so as to get the fullest benefits," McGee explained. "To do that, I figure I have to go all the way—handle the land so that it gets better and use the very best kind of seed, fertilizer, and livestock."

The herd of 50 purebred Herefords, which had replaced eight grade cattle kept in 1940, was convincing evidence that McGee tried to have only the best.

And the fact that he produces five kinds of certified seed, going every year to the breeder for some new seed, shows he's doing his part to help others get good seed. McGee is president of both the South Carolina Crop Improvement Association and the South Carolina Foundation Seed Producers.

He lists 10 sources of income to prove he is practicing diversified farming. Certified barley, oats, wheat, cotton, and hybrid corn seed account for five of these. Suiter's grass (Kentucky 31), Korean lespedeza, and Dixie crimson clover seed are three other sources. Cotton and cattle complete the list.

His plan to put each acre to its best use and to plant each crop where it can do the best job is in evidence everywhere on that big Piedmont farm.

For instance, McGee decided to plant alfalfa for hay about 18 months ago. He had SCS and Clemson College people advise him as to the type of soil best suited to alfalfa. His conservation survey map, a part of the survey made of the entire county by the SCS, showed him right where to find the "push" soil recommended for alfalfa. And after buying the best alfalfa seed he could find in Kansas, he planted it on 12 acres carefully prepared for producing this crop.

Registered herd sire grazing fescue on farm of W. Hugh McGee.

Terraces and a perennial strip of sericea above the moderately sloping alfalfa field help control soil erosion. During the year, McGee has taken up about 4 tons of hay from each acre, leaving almost a full cutting to remain on the land over winter. He expects to expand his acreage of alfalfa so as to supply hay for his growing beef herd.

Kentucky 31 fescue (or Suiter's grass), with subterranean clover, Ladino clover, and Dixie crimson clover, now covers 75 acres of both hill and wet bottom land. After 2 years' experience

with fescue, he's thoroughly sold on it as the best grass ever to hit Anderson County.

"I like fescue because I can get away from plowing land and get more grazing more months of the year than with anything else," he told me. "With fescue, I have grazing when I would otherwise be short. When the acreage I seeded this fall to fescue and Dixie crimson is ready to graze, I'll have enough to keep my cattle on pasture all the time. I'm going to continue to give the cattle access to hay and barn space all year long, but I'm counting on them to prefer that fescue."

McGee planted fescue next to each field of kudzu to provide for year-around grazing close at hand at several points on the farm. And there are 40 acres of kudzu and 50 acres of sericea lespedeza that come in mighty handy for summer grazing. Some of the sericea is mowed for hay, and some of the kudzu will not be at its best until this coming summer. McGee overseeds sericea with Dixie crimson clover and ryegrass so as to extend the grazing season on this land.

Pines, kudzu, and sericea, in particular, have done a remarkable job in halting soil erosion on badly washed land. It is doubtful if any other plants could have filled the need for bringing this land back into usefulness. Fescue's ability to grow well on wet land has made possible the conversion of 22 acres of swamp to pasture. Ditches opened with dynamite help drain this land.

Another crop that is playing an important role in McGee's conservation program is Korean lespedeza. On all rotation fields, this crop covers the land 2 out of every 3 years. Only the lespedeza seed is harvested; all other growth is worked into the top layer of the land.

The 30 acres of hybrid corn and 120 acres of cotton that McGee plants each year follow annual lespedeza. He plants small grain after row crops in order to avoid trouble with noxious weeds in producing certified seed.

"I'm trying to get the top layer of the land chock full of organic matter," the Piedmont farmer explained. "That's the real answer to the big problem of getting the soil to absorb rainfall and of reducing runoff."

McGee believes this so strongly that he leaves all of the corn growth on the fields except the grain itself. His corn harvester is rigged so that it picks, shucks, and shells the corn as it moves through the fields, leaving a lot of residue to be chopped into the soil while preparing the seedbed.

But McGee doesn't expect organic matter alone to keep crops growing vigorously. Each year he uses about 100 tons of fertilizer and 40 tons of basic slag. Crop yields reflect the benefits of this and other soil-improvement practices. Average yields to the acre of some crops are: 28 bushels of wheat, 75 bushels of oats, 50 bushels of barley, and 55 bushels of corn.

McGee's entire land improvement program is being carried out in cooperation with the Upper Savannah Soil Conservation District of which he is a supervisor. He and the SCS technicians developed a plan for the entire farm as soon as he took over management in 1939.

EVERYBODY WINS

By LAURENCE T. SMALL

Gottfried and John Bahler on their carpet of Ladino clover pasture, with some of their dairy animals in background.

BELIEVE it or not, in the tidal wave of contests sweeping our country there is one competition in which every entrant really is a winner. Records started in 1947 show that there never has been a loser since the day Governor Dale of New Hampshire came up with the "green-pasture" idea. He tossed out the best hat his money could buy for the Governor of the New England State that produced the top job in pasture improvement.

Every year since, several thousand New England farmers and many others in distant and nearby States have put forth their best efforts in

Note.—The author is district conservationist, Soil Conservation Service, Rockville, Conn.

all phases of pasture improvement. And every one of them has harvested gilt-edge dividends.

Of course, it's swell to win "the hat," or any one of the great number of additional awards now offered on a community, county, State, or regional basis. However, more valuable than any of these, or all of them put together, is the cumulative worth of the increased production on farms belonging to the contestants. It is this sure-fire return that makes the green-pasture contest and conservation farming click faster and faster.

That's the way it was this year with the Bahler brothers, John and Gottfried, of Ellington, Conn., who won third prize in the all-New England contest. This award was nice to get, but more important was the knowledge that "the value of our improved pasture was $50 per acre above the cost of seed, lime, and fertilizer," Gottfried Bahler says.

Back in 1948 the Bahler pastures won special recognition, above the average but not quite good enough for a prize. The Bahlers determined to do better in 1949. Late in '48 they commenced renovating old pastures and developing new ones for 50 dairy cows and 12 head of young stock. (They also raise potatoes and tobacco on the 124-acre home farm in Ellington and their 150-acre farm in Tolland.)

Much of the home farm's land was wet, drainage being necessary before it could be developed into improved pastures. With the aid of SCS technicians working with the Tolland County Soil Conservation District, a drainage program was

Here's the area drained and improved. The Bahler farm was Connecticut's 1949 Green Pastures winner, placed third in the all-New England contest. Broad Creek was improved to drain the land and provide irrigation water for pastures.

This is former muckland on the Bahler place after it had become an improved Ladino clover pasture. Tractor mower is clipping weeds.

laid out and a mile of ditch and stream channel was excavated during the winter to benefit 25 acres. Stream and ditch banks were sloped and spoil was graded over adjacent muck land to provide a firm seedbed.

Soil samples of spread material, tested at the University of Connecticut, revealed a low fertility. To overcome deficiencies, lime, nitrogen, potash, and phosphate were applied. Then the improved area was seeded with a mixture of 3 pounds of Ladino clover and 10 pounds of bromegrass per acre, with a bushel of oats as a companion crop. Ditch and channel banks were seeded with ryegrass.

The value of early planting was proved under the test of New England's summer drought of 1949. Many of the best of the old-time pastures suffered severely from the burning sun and moistureless soil. However, the Bahlers' seeding had become well established and flourished during the early summer. Controlled and rotational grazing were started in June. Oat stubble and weeds were clipped twice.

In July a 2-year-old Ladino clover seeding in adjacent well-drained soil began to show the effects of the drought. Pasture irrigation was started at once from the deepened and improved stream channel. With ample fertility and the sorely needed moisture, recovery was rapid and the improved pasture area successively became Tolland County's best, Connecticut's best, and finally the third best in all New England.

Gottfried Bahler, who is a supervisor in the Tolland Soil Conservation District, sums it up this way: "In 1949 the value of our improved pasture was $50 per acre over the cost of lime, fertilizer, and seed. At this rate our drainage project will pay for itself in two more years."

NEBRASKA LAD WINS CONSERVATION CONTEST

WILFRED M. SCHUTZ, 19, son of Mr. and Mrs. Martin J. Schutz, Eustis, Nebr., won first place in the $15,000 Nation-wide essay contest on "Conservation of Our Soil Resources" jointly sponsored by the National Grange and American Plant Food Council.

Secretary of Agriculture Charles F. Brannan, chairman of the board of judges, presented the awards at a dinner in Washington, D. C.

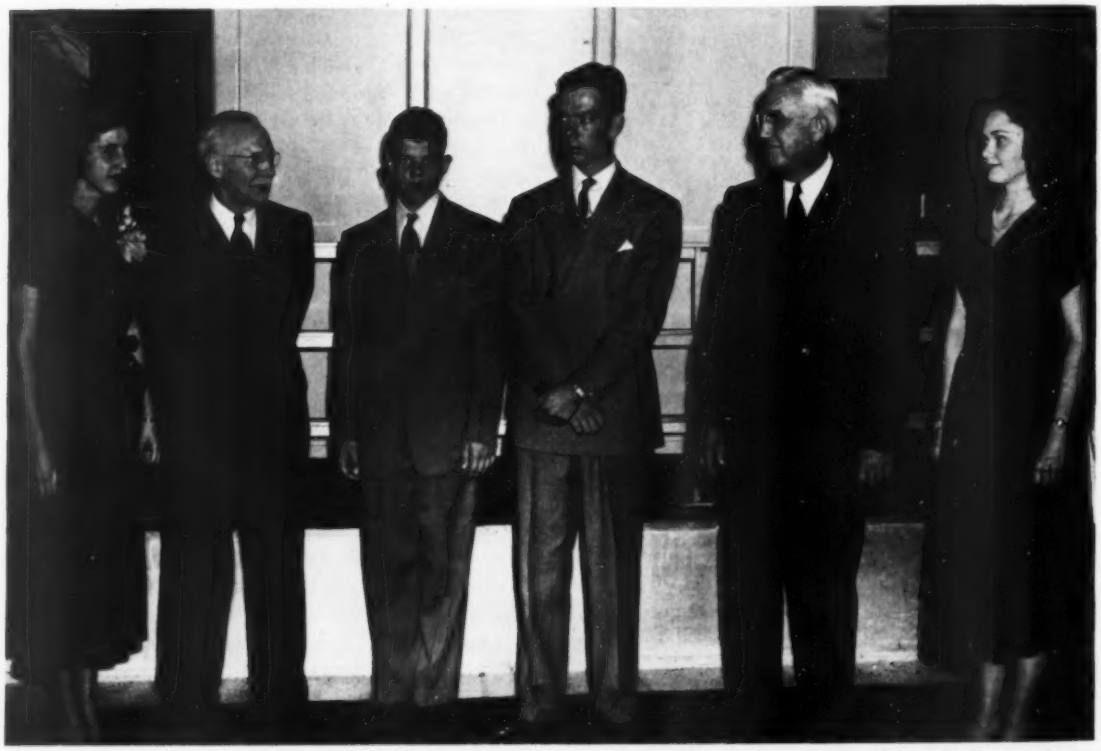
First and second national prizes were automobiles. Third prize was $750 in cash, and the fourth prize was $250 in cash.

Other national winners: Second, Miss Natalie Snyder, 18, Pittstown, N. J.; third, Jack Hardy, 13, Blackstone, Va.; fourth, Mrs. June Thompson McKnight, 18, Street, Md.

In addition to Secretary Brannan, national judges were Dr. Hugh H. Bennett, Chief, Soil Conservation Service; Mrs. Malcolm Byrnes, president, National Home Demonstration Council, Ethel, La.; Dr. W. T. Spanton, Chief, Agricultural Education Service, U. S. Office of Education; and Dr. M. L. Wilson, Director of Extension Work, United States Department of Agriculture.

Clifton A. Woodrum, president of the council, and Albert S. Goss, master of the Grange, in congratulatory messages to winners emphasized the importance of conservation of our soil resources in a sound land-management program, and added that "all of us look to the youth of the Nation for the leadership and strength with which to build a strong, self-sustaining agriculture, and we believe that this contest has made a substantial contribution to both the thinking and action of young men and women on the important problems of our land and its care."

Officials of the contest estimate that more than 10,000 essays were entered. Entries came from 48 States and the District of Columbia.



Winners and sponsors: Left to right—Natalie Snyder, Pittstown, N. J.; Albert S. Goss, National Grange Master; Jack Hardy, Blackstone, Va.; Wilfred M. Schutz, Eustis, Nebr.; Clifton A. Woodrum, council president; Mrs. June Thompson McKnight, Street, Md.

Conservation of Our Soil Resources

FIRST PRIZE ESSAY

By WILFRED M. SCHUTZ

IN THIS atomic day and age we are inclined to look with horror upon the destruction that can be wrought by atomic bombs, as demonstrated at Hiroshima and Nagasaki. But, sad to say, very few people realize that a single flooding rain removes in a few hours or even minutes countless tons of fertile topsoil, which required many centuries to form. The dropping of the first atomic bomb made headlines in every newspaper in the world, but very little attention is excited by the fact that each year inestimable amounts of the very soil upon which the people of the world subsist is being lost. Something must be done, and done quickly, if we hope to preserve for ourselves and for future generations the oldest possession in the world, the soil. If we are to maintain our position as the "breadbasket of the world," we must begin at once to follow a rigid system of soil-saving operations.

Terracing and contour farming are two of the most important means of checking water erosion. Both of these methods lead the runoff water to a gentler slope, where its progress will be much slower and consequently will do much less damage. The grassing of field waterways is one of the most important and convenient methods of stopping the small amount of washing that might result from terracing, or of holding the soil in waterways where terracing is not practical. Hand in hand with these operations go the practices of mulching to prevent runoff, and the regrassing of slopes too steep to be farmed without serious depletion of the soil by erosion. The practice of allowing crop residue or mulch to remain on top of the ground is a comparatively simple one. The subsurface is tilled in such a way as to leave the bits of stalks and stubble on the surface of the ground, where they act as a "buffer" to break the force of the raindrops and as a filter to hold back the soil particles if runoff occurs. The grassing of steep slopes in many cases increases the value of the farm by giving it an increased livestock capacity as well as preventing erosion. Strip cropping, as well as mulching and grassing, is an effective means of combating that other great element of erosion, the wind.

The other highly important factor with which we must contend is the depletion of our soil resources through unwise cropping methods. It is estimated that the richest bottom land contains enough nitrogen to grow a 60-bushel-to-the-acre corn crop for 65 years, if it is cropped continuously and nothing put back. This example shows us that we must expect to put something back into the soil if we are to continue to receive profitable yields.

In spite of the fact that commercial fertilizers have been an important aid to the farmer in maintaining soil fertility, there is a tendency to rely on them too completely. There is an old Flemish proverb that says, "Without forage, no cattle; without cattle, no manure; without manure, no crops." If it were true then, it certainly is true now. Farmers that specialize in selling only cash crops, and attempt to maintain the fertility of their land through the use of commercial fertilizers alone, are not adequately providing for the needs of the soil. A soil that is in good condition possesses not only abundant fertility, but a satisfactory tilth as well. A good tilth can be maintained only by plowing under from time to time a liberal supply of barnyard manure as well as any crop residue that remains on the land. Tilth is one of the most important determining factors in the ability of a soil to hold water, and hence to check erosion.

A good farmer should not overlook the opportunity of renewing his soil fertility by means of crop rotations, especially a rotation that includes legumes. A well-inoculated legume crop serves a threefold purpose; it greatly increases the nitrogen content of the soil; it helps pulverize the subsoil by means of the numerous tap roots which it sends down, and it is beneficial to the tilth of the soil. All of these make for better conservation of our soil resources.

The idea of the conservation of our soil resources is not a new one, but it is certainly more important now than it has ever been before. Our Nation and the world must realize now that a high standard of living, and a healthy economic status cannot be maintained if our oldest and most important natural resource is allowed to deteriorate. Only through an intelligent system of terracing, contouring, crop rotation, and fertilizing can our present methods of intensive agricultural production be maintained and improved.

SIX-COUNTY DISTRICT.—As a result of a referendum, Wyoming and McDowell Counties have voted to join the Southern Soil Conservation District of West Virginia. This district now includes four counties. With the additional counties, it will become the largest district in West Virginia, which now has two five-county districts. The work of the Pioneer Sportsmen's Club was largely responsible for the successful district campaign in Wyoming and McDowell Counties.

NEW CROPS FOR WESTERN TEXAS

By MORRISON W. LISTON

Charles C. Thompson (left) and Technician Al Robertson examine Thompson's 7-acre planting of Austrian winterpeas near Colorado City, Tex. Cows had grazed the plants almost to the ground in late spring.

IN THE Mitchell County Soil Conservation District of western Texas, Charlie Thompson's planting of Austrian winterpeas is evidence that this legume, though a newcomer in the neighborhood, has found a new home with job attached.

H. M. Moore's alfalfa has visitors from far and wide coming to check up on the stories they've heard.

And the vetch on the Leslie Hamilton and O. B. Trulock farms is indeed something to write about.

These crops seem to be a three-way answer to many a farmer's prayer in this area where blowing sand is a winter-long problem and where good legume crops are needed in the rotations.

Farmers here have been wanting a crop, too, that would put some 2,000 acres in low, seepy spots into productive use on 200-odd farms. These have been idle, troublesome spots as long as can be remembered.

No one suspected until comparatively recent years that alfalfa, vetch, and Austrian winterpeas might have a place in the Mitchell County Soil Conservation District. It was generally believed that it was too dry for alfalfa or vetch to do well.

NOTE.—The author is district conservationist, Soil Conservation Service, Sweetwater, Tex.

Leslie Hamilton planted this field of vetch 4 years ago on the poorest land on his farm. The crop reseeded itself and furnished excellent grazing notwithstanding dry weather.

And no one gave Austrian winterpeas a thought until Thompson decided to try them.

The recent growing season, of course, was unusually good. You can grow broom handles in west Texas with last spring's moisture. But Hamilton's crop of vetch is 3 years old and it has reseeded itself and produced excellent grazing through some of the driest years Texas farmers have known.

Hamilton planted his vetch at the suggestion of Al Robertson, the SCS man assigned to the Mitchell District. He picked out 40 acres of what he considered the poorest land on the farm to develop for pasture. Erosion, over a long period of clean-tillage, had taken away nearly all topsoil. Hamilton remembered the land as a boy. It adjoined the farm where he lived, and he worked on the place for wages. The land in those years was as good as any in the neighborhood. But yields went down, slowly at first, then rapidly, as wind and rain did their work.

When Hamilton bought the 590-acre farm in 1945, he tried kafir on this field.

"The kafir didn't make enough to harvest," he said. "I put cows in to graze it off."

Hamilton already had talked with the supervisors of the Mitchell district about a farm plan. When he signed an agreement he decided to try Robertson's idea on vetch. He planted the vetch with rye, using 100 pounds of superphosphate.

"It didn't do so well the first winter," Hamilton reports. "But the next 2 years I grazed up to 45 head of cows and calves on it and it kept on growing in spite of the dry weather."

A 36-inch hairy vetch plant is held by O. B. Trulock. The 11-acre field yielded 4,700 pounds of seed in 1947. He planted the vetch-rye combination in a low, troublesome area that had produced nothing as long as Trulock had known the place.

Trulock also planted vetch at Robertson's suggestion. He especially wanted to control the blowing on a 40-acre field on his big farm. He used a 3-to-1 ratio of rye and vetch, fertilizing with superphosphate at 200 pounds to the acre.

H. M. Moore stands in heavy alfalfa in field that produced 202 bales of hay to the acre in 1948 after having given 4 months of profitable winter grazing. Moore looks across fence at white, blowing sand and recalls that his alfalfa land looked the same way 3 years ago.

An 11-acre planting of vetch on Trulock's place is something the neighbors marvel at. As the stand improved in the fall of 1946 he put five horses and five cows on it. He added more cows as the growth gained. Trulock grazed the 11 acres from December 1946 to March 1947, then let it make seed. He harvested 4,700 pounds of seed.

Trulock usually has about half of his 3,171-acre farm in cotton. He is extremely interested in a crop that will work in rotation with his cotton. The cotton land has 125 miles of terraces. But nearly all the land is subject to blowing and that is another reason for his interest in vetch. He believes the legume may occupy an important place in his coordinated soil conservation program.

Moore's alfalfa is on a farm just north of Colorado City in the same district. He bought the place in 1945. A 30-acre field was a strip of white, constantly moving sand and appeared to be almost worthless for cropping. However, Moore put alfalfa on it in 1945 just to give it a try. Robertson had advised an application of 100 pounds per acre of superphosphate. Moore reasoned that 200 pounds ought to be twice as good. He may have been right, at that. His alfalfa is the envy of farmers for miles. He cut it six times in 1948, getting a total of 202 bales to the acre.

"I could easily have had another cutting before frost," he said. "And 1948 was a very dry year. Ten acres of the 30 gave me 2,162 bales."

In the winter of 1947–48 Moore had 33 head of steers on the alfalfa. They averaged 300 pounds when he put them on, and when he sold them the following April they averaged 600 pounds.

Moore plans to expand his alfalfa acreage. It's his most profitable crop.

Thompson planted Austrian winterpeas in October 1948 on 7 acres of "dead land" that had not been in cultivation for 10 years. It was a trial planting. His brother, Wiley B., who farms near Stephenville, had bragged on the crop and helped Charles get some seed.

The winterpeas were in a field with a planting of rye and another of wheat. Early in December the peas, wheat, and rye were ready for grazing so Thompson turned in 50 head of cows and heifers. A little later, when the crops appeared to be gaining, the number of grazing animals was increased to 100.

When Thompson checked from time to time on the stock, he noticed that they always appeared to be eating winterpeas instead of wheat and rye. Before he realized it, the animals had grazed the stand of peas almost to the ground. He thought he had let the grazing go too far and took the cows off. However, before he knew it the peas had regained their vigor and growth.

"That's a crop I think we can bet on in this country," Thompson says. "It's going to have a place in my conservation program."

Thompson long has been an ardent supporter of soil and water conservation. In addition to his practice of law in Colorado City, he is president of the City National Bank, chairman of the board of Regents of Texas Technological College at Lubbock, and vice chairman of the Farm Credit Board of Houston. His 5,700 acres of farm and grassland are under agreement with the Mitchell County district and he is getting along with his program as fast as manpower, equipment, and growing seasons will permit. He is always eager to give a new crop a try.

He proudly shows the visitor his 10-acre planting of weeping lovegrass, his orchard, his 900 acres in pasture and the soil-improving crops.

EXCELLENT IDEA.—Early in 1949 the Agricultural Committee of the West Virginia State Bankers Association urged its local members to join with district governing bodies to help get the SOIL CONSERVATION Magazine into the hands of district cooperators. It is currently reported that several hundred cooperators are now receiving this magazine every month.

THE SOIL IS DARKER—YIELDS ARE UP

By ROY E. BALLARD

Leland Warner's big gully as it looked in June 1946, about the time stabilization was getting started but before locust trees were planted.

MUCH of New Jersey is so flat that many a farmer finds it hard to believe that his land has a serious erosion problem. He doubts that the State is losing any soil except perhaps along the ocean and on the Delaware River and bay fronts, where there are a lot of vacationing city folks but few farmers.

But Leland Warner, who owns and tills 116 acres near Woodstown, in Salem County, sees things very differently. Since 1945 he has had a complete conservation farm plan which, he says, "has given me a peace of mind that I never had before and has enabled me to sleep peacefully at night when it is raining hard, because I know my farm is not washing away."

In the last 5 years, while old timers scratched their heads and looked on in wonderment, Leland Warner has completely rebuilt his badly eroded farm, a farm that was producing less and less crops at more and more cost, into a very productive farm.

In this process, Warner licked a lot of tough problems. Take, for example, that big gully—200 feet long, 40 feet wide at the top, and 18 to 20 feet deep—and several other smaller gullies, 4 to 5 feet deep, right in the middle of his cropland. Runoff from storms, and winds, made them, and they were steadily becoming bigger and bigger.

Note.—The author is work unit leader, Soil Conservation Service, Salem, N. J.

Contour strips in 2-year rotation of tomatoes and wheat. Warner's big gully, now stabilized, starts over at the right.

When harvest time came it was necessary to carry along shovels, because the gullies had to be back-sloped and filled before tomatoes and other crops could be gathered from the fields.

From the fields that washed through these gullies vital productive elements were being swept away. The acidity of the soil had become very high, as indicated by a pH range of 4.0 to 5.0, not uncommon for soil in that area under similar conditions. The organic content was down to less than 1 percent and the soil was tight and compact. Plowing, disking, and other cultivating were hard to do. There were no earthworms—the plowmen of Nature—and the color of the soil was abnormally light, as if it were bleeding to death.

In these fields, tomato yields from 1942–44 were down to an average of 9.5 bushels per acre, with 10.5 the maximum. In 1933 the fields had produced 25 bushels of wheat per acre. When Warner quit growing wheat and substituted white potatoes in long rows up and down the grades, his production became worse instead of better, while production costs kept mounting.

When it rained at night, back in 1942–44, Warner says he could not go to sleep because he was disturbed by what was happening to his land. He was ready to do anything that would put him on a better production basis and turn his losses into profits.

About that time Salem County became a part of the South Jersey Soil Conservation District, and with this came Soil Conservation Service technicians. They were ready to cooperate with farmers and help solve problems such as Warner's.

At the request of the district supervisors early in 1945, technicians in the Salem work unit made a study of Warner's farm to determine the condition of the land and the degree of erosion in every field. Later, with Warner's help, they developed a complete conservation farm plan for all of his acres. Warner got busy and put the plan into operation. Making use of his tractor, plows, and other farm equipment and labor, he built diversions and outlets, established contour planting and strip cropping, and started crop residue management, rotation, and cover-crop programs. In the most severely eroded areas he began reforestation with seedlings obtained by the district. His cash outlay for the whole installation was only $4—$2 per day for 2 days' use of a blade rented from the district and used with his tractor.

He adopted a 2-year rotation system—tomatoes followed by wheat into which timothy and red clover were seeded. In the fall, after tomato harvest, he disked the residue into the soil before seeding wheat, plus 3 pounds of timothy per acre. Late in the following February he broadcast 10 pounds of red clover per acre. When he combined the wheat, he left the straw on the ground. With the red clover and timothy, it formed a good protective fall and winter cover. In the spring of the third year the cover was plowed under before he set tomatoes in the second cycle of rotation.

Through this system Warner harvests a cash crop from his entire farm every year, keeps a cover crop on the whole farm every winter, and turns a mat of clover and timothy into each cultivated acre every second year.

To meet the soil's need for plant food, he applies enough lime to bring the pH count to the 6.0–6.5 range. For tomatoes he applies 1,500 pounds of 5–10–10 fertilizer. For wheat he uses 300 to 500 pounds of 4–12–8.

With his complete conservation farm plan hitting on all cylinders for sufficient time to prove its real worth, Warner now has a better farm than he ever had before, and it is producing so abun-

dantly that it seems almost like a miracle. About 90 percent of the farm is contoured and approximately half is strip-cropped. Topography of the other acres is such that use of contours and strips is not necessary. Diversions are fully vegetated. The 4- to 5-foot gullies have healed. Through normal cultivation the soil there has been leveled and no longer is it necessary to make back-fills so they can get the crops out of the fields. Equipment moves over it with ease.

At the head of the big gulley, contoured strips handle the rainfall so effectively that there is no need to install mechanical devices for control of runoff. There just isn't any runoff. In the bottom, about 100 locust trees have been started, and at each side above the gully, Warner has taken a half-acre strip out of cultivation and started reforestation.

Yields are uniform. In poor areas that produced only 10 percent as much as good areas in preconservation farming years, the yields are now 80 to 90 percent of what those good acres produce, and are still climbing. Tomato yields have jumped to an average of 13.8 bushels per acre, with a maximum of 15 bushels. Fields that produced 25 bushels of wheat per acre in 1933 hit an average of 35 bushels per acre in 1946, 47, and 48, when the maximum yield was 42 bushels per acre.

Many other benefits are noticeable. The soil is darker—close to natural color for the type. It is more friable, and cultivation is easier and costs are less. Organic content has increased from less than 1 percent to about 2 percent. Earthworms are abundant. Rainwater that formerly fled over his fields and slashed out the gullies is largely retained right where it falls. No soil is being carried away. Full benefits are being obtained from lime and fertilizer.

Leland Warner delights in putting on his raincoat and boots and going to his fields during a heavy storm, to smile over the efficiency of his controls. What's more, he gets an extra wallop out of what's happened to 10 acres of land, slightly more than 8 percent of his acreage. It had been so badly eroded that use of it was abandoned. Now it has been reclaimed and is back in cultivation and production.

"Sure, there's plenty of erosion on most south Jersey farms, but there isn't any on *my* farm any more," he exults. "Erosion can be licked, and lost productivity can be recaptured, if methods now available to all farmers are used. It is just a case of making up your mind that you are going to do it, then doing it. That's what more and more Jersey farmers are finding out every year."

Contour plantings of tomatoes on one of the less eroded fields.

REVIEWS

POSSUM TROT FARM. By Leonard Hall. The Caledonia Press. St. Louis. 1949. 161 pp. Illustrated.

The only trouble with a book like this is that you enjoy it so much you hate to come to the end.

I suspect most people develop a sort of picture of the places they read about, such as Possum Trot Farm. Somehow to me it is a place where you can enjoy yourself even by just sitting around looking out of a window at this and that. As a matter of fact, I have just been looking out of some of the windows of the author's house at a variety of interesting things, although I have never seen the house or so much as 1 acre anywhere near it. I have seen much of the Ozarks, however, and it isn't at all difficult for me to get into the spirit and point of perspective to understand and enjoy all that Leonard Hall has put into this book—to visualize the landscape by way of the imagination—and get a great deal of pleasure out of it.

—H. H. BENNETT.

BOBWHITES ON THE RISE. By Verne E. Davison. Charles Scribner's Sons. New York. 1949. 150 pp. $3.75.

It is unfortunate that such books must cost so much, for here is one that is needed by a host of people. It tells landowners of the Southeastern States how to fit quail management into farming and forestry practices by creating food and cover on areas that have no better use.

Food abundance in much of our quail range is an illusion, says the author, and we are learning to provide it through the use of bicolor lespedeza, a leguminous shrub that bears seed crops reliably from Virginia southward. One of the best locations for bicolor is on the sapped borders of woodlands, where it may be combined with a turnrow of sericea lespedeza. In open pine stands of the South a ⅛-acre strip of bicolor provides support for one wintering covey. Hedges of bicolor and/or multiflora rose hold promise, but new patterns need to be tested. Intelligent and strictly controlled burning is given cautious approval for some southern forest types.

The book deals with less certainty on northern quail management, although the principles hold. New strains of bicolor are in the offing—that will fruit early and miss the frosts. For the entire quail range, the soil conservation district is emphasized as the best means of getting improvements onto the land.

This management guide is quite as important for the things it says not to do: In this field it can serve the sportsman who is willing to learn, and it applies no salve to the prejudices of those who will not. Rearing a few quail in your back yard is a pleasant hobby, says Verne Davison, but artificial stocking of either reared or transplanted birds is not the way to manage quail. Rather, create the conditions that produce coveys where there were none before and you've done something. Refuges are not effective—make all the land productive. Predator control is unimportant. Winter feeding has no place in a realistic more-quail program. As for annual food patches of mixed grains, "You should never plant these confounded mixtures."

The author may have some misunderstandings over terminology. When he debunks the idea that "Nature will provide," he is not deriding the productivity of wild populations or the utilization of biological forces. His point is that conditions developing by chance on the land will not given maximum quail production. The entire book is based on the proposition that Nature *will* produce if given the opportunity via a deliberately planned economy for the bobwhite.

The opinions and attitudes so strongly stated in this book are good. They are soundly based upon the most modern concepts of population biology. They will be alive and producing fifty years from now, albeit with a new look here and there. It is satisfying to the ecologist to read a book that recognizes animal numbers as a measure of the environment, to be regulated by controlling the conditions that produce them. When the quail population of the entire range is estimated at 60 million, the figure is realistically designated a *fall* estimate. So often this is ignored!

A point of emphasis in this work is the role of the landowner as the producer and custodian of game. If this key individual is ignored and not encouraged or helped, it matters little what the State game department may do. Recommended legislation would make the hunting license invalid *without the permission of the landowner.*

There is no implied claim that the present publication is the last word on quail management. In fact its techniques are presented as being in the developmental stage. For the most part they are not proved by quantitative measurement, but Mr. Davison's position as regional biologist of the Soil Conservation Service in the Southeast has enabled him to help landowners try both plants and patterns on farms and quail preserves, and he has seen them work. That they will work even better as more is learned is a part of his thesis, and we have the feeling that he is not wrong in his infectious faith.

—DURWARD L. ALLEN, biologist, Fish & Wildlife Service.

DISTRICT PROFILE—Ritter

(*Continued from p. 152*)

change owns a railroad siding warehouse, a store in the village proper, and an office building.

Under the Paige bequest, the fund trustees, Exchange directors, and Ritter have the responsibility of providing an annual series of free public lectures on agricultural, floricultural, dairy, and poultry subjects. This provision was written into the Paige bequest for the purpose of "rousing and stimulating further interest in farming pursuits and domestic industries." Ritter, who most actively oversees and pursues the idea behind the original bequest, says that "as long as agricultural furtherance is the goal, the Paige fund remains as a solid bulwark against almost any foreseeable change in the town's dairying progressiveness."

—HUGH F. EAMES.

NOTES FROM THE DISTRICTS

ORGANIC MATTER RETURNED.—As far as Wayne Chaney is concerned, soil conservation and good farming are the same thing. Practices on the approximate half section of dry cropland he farms near Haxtun, Colo., include strip cropping, crop residue management, and grass planting. One of the most important things he is accomplishing is getting back some humus into the soil.

Chaney, who is cooperating with the Haxtun Soil Conservation District, explains that the great majority of fiber had been burned out of his soil by some 50 years of alternate cropping to wheat and corn with little attention to what this mining was doing to the soil.

With restoration of organic matter in mind, he started out with crested wheatgrass plantings with the idea of using grass in a rotation, plowing up a pasture after about 5 years. However, beef cattle on these crested wheat pastures have done so well that more and more of his land is going into grass.

Chaney also has 170 acres of native pasture for summer use. His cattle go on this after they come off the crested wheatgrass in the spring. He has seeded 40 acres on one end of this native pasture to crested wheatgrass—this was a patch of nothing but white blow sand. Sorghum grown on his cropland for roughage to carry his cattle through the winter completes his year-around cattle operation.

On his strip-cropped land, subsurface tillage is doing the job of getting fiber into the ground. Every stalk of wheat stubble, for instance, is worked back into the surface.

Commercial fertilizer is something that Chaney gets almost as enthusiastic about as he does his grass. Most of his corn was fertilized with an 18–9–0 mixture (18 parts nitrogen, 9 parts phosphorus, no potash) last spring. Maturity of the fertilized corn was 10 days to 2 weeks ahead of that which was not fertilized. Chaney says this is due chiefly to the fact that the fertilized corn got a 10-day to 2-week earlier start in the spring. It just sprouted and grew that much quicker, and it held the advantage all through the season. He figures to get 6 to 10 bushels more corn per acre from the fertilized corn. Six rows down through the middle of the field were left unfertilized and the difference is readily seen at a glance.

On his strip-cropped land where his rotation is corn, fallow, and wheat or rye and feed crops, Chaney's corn yield is now twice what it used to be on straight continuous cropping. That's one of the reasons he says soil conservation means the same thing as good farming—it pays.

GOOD CHECK.—The Commercial National Bank of Nacogdoches, Tex., has found that the conservation of soil is good not only for the land but for business in town as well. So the bank is calling attention to the value of soil conservation. Across all its checks is printed: "Soil conservation is necessary for permanent prosperity."

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1 TO 1,000 FARM DAY.—As a part of the annual observance of "Pennsylvania Week" Governor James Duff helped the York Soil Conservation District celebrate "1 to 1,000 Farm Day," marking the acceptance of a complete conservation farm plan by the thousandth York County farmer. The 2-day event included visits to the farm of Gibson Strickler, the No. 1 cooperator, who still is an active conservation farmer; and the farm that Donald Harlacker recently purchased and for which the thousandth plan was prepared. Strickler and Harlacker participated in a coast-to-coast broadcast. The occasion drew a lot of Pennsylvania and Maryland newspaper space and radio time. York County, organized as a soil conservation district in October 1938, is the first *county* in the 12 Northeastern States to cut the thousandth notch in its achievement stick. Pennsylvania's Clarion County Soil Conservation District hit the 1,000 mark a few weeks later and gave special recognition, by newspapers and radio, to David H. Whitemore, No. 1,000 cooperator. The Lancaster district is very close to the 1,000 mark.

TEXAS GRASS ENTHUSIASTS.—Two small grass nurseries owned by J. G. McBride and Andy Harvil are helping to stimulate interest in range grass reseeding in the Aqua Poquita Soil Conservation District in Texas, with which they are cooperating.

McBride, first cooperator in the district to plant King Ranch bluestem, and Harvil, who has his nursery in his garden, have just about every specimen of native grass found in Texas. Both men have also introduced new grasses to the district through their nurseries.

WATER WORKS WONDERS.—A 2-acre orchard on the Wagon Wheel Ranch, a combination farm and summer guest ranch 6 miles south of Showlow, Ariz., is owned by Dr. Earl C. Dohner. It is now being irrigated efficiently for the first time as a result of a soil and water conservation program.

Dr. Dohner is a dentist and doesn't have time to look after his farm, so this work is done by Mrs. Dohner, her daughters, and a hired hand.

When the Dohners applied to the Navajo County Soil Conservation District for assistance in planning, their

most pressing problem was what to do about the irrigation system in the 9-year-old apple orchard.

SCS technicians found that the orchard had been planted in straight rows on an irregular slope, with the result that each row of trees ran up and down the hillside. The irrigation ditches running down the slope had become gullies, and the water ran down so fast that it didn't have time to seep into the soil.

The technicians made a topographic map of the orchard and planned a head ditch to run down the highest ridge. Concrete drop structures to control the flow of water then were installed at each vertical drop of 1 foot. The Dohners rented steel forms from the district for making the concrete drops.

The orchard then was benched across slope at two levels between each two rows. They amounted to two wide-bottomed furrows about 5 feet wide. This makes it possible to irrigate the trees on both up-slope and down-slope sides. Forty-four turn-outs then were installed in the head ditch, one for each bench or wide-bottomed furrow. The entire orchard is to be seeded to a mixture of alfalfa and bromegrass to provide a cover crop and hay.

Now the Dohners can irrigate the orchard and garden in 2 hours. Each tree is properly watered. A good apple crop resulted this year. Best of all, the loss of valuable topsoil has been halted.

CURBSTONE SALESMEN.—In Texas, grass is one of the most important crops. It is small wonder, therefore, that the sight of grasses growing in front of Soil Conservation Service headquarters at Jacksboro should excite the attention of both visitors and passers-by.

Here we see District Conservationist J. C. Porter (left) explaining the characteristics of Indian grass to Norman Munster of the Budget Bureau, Washington, D. C. The other grasses are King Ranch bluestem (left), big bluestem, and little bluestem. Porter brought the native bluestem and Indian grass plants in from sites nearby. Switchgrass and side-oats grama are also in the sidewalk plot but are not shown in the photo.

King Ranch bluestem is an introduced grass which is proving of great value in erosion control and in range and pasture improvement. Munster stopped by the Jacksboro office on a trip to see flood-control work in progress in the Trinity River watershed. In the area he saw the tall-growing bluestems, Indian grass, and switchgrass on ranges that appear much the same as in buffalo days. Farmers and ranchers especially are interested in the grass display, and Porter suspects that information they got in asking about the grass may account in part for the 150,000 pounds of native grass seed harvested recently in the area.

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